

## A KEY TO THE SPECIES OF NEBRIA OF NORTHWESTERN NORTH AMERICA

(Coleoptera, Carabidæ)

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In the accompanying key to the species of *Nebria* north of California and west of Colorado, I have followed in some of its essentials the classification of Bänninger, *Ent. Mitteil.*, XIV, 1925, pp. 187-195, 256-281. For additional literature see Horn, *Trans. Amer. Ent. Soc.*, III, 1870, pp. 97-104.—LeConte, *Bull. U. S. Geol. Geog. Surv.*, IV, 1878, pp. 473-480.—Schaupp, *Bull. Brook. Ent. Soc.*, 1878.—Van Dyke, *Pan-Pac. Ent.*, I, 1925, pp. 115-122; *Ann. Ent. Soc. Amer.*, XIX, 1926, pp. 8-12.—Bänninger, *Kol. Rund*, XIV, 1928, pp. 5-7; *Deutsch. Ent. Zeitschr.*, 1931, p. 178; 1933, p. 81.—Darlington, *Psyche* XXXVII, 1930, pp. 104-105; XXXVIII, 1931, p. 24.

Bibliographical references are given only for localities not represented by specimens in the author's collection.

### KEY TO SPECIES

Tarsi above glabrous; labial palpi with penultimate segment with three setæ.

- 1 (40) Elytral humeri rounded, evident; male protarsi with three segments dilated; head behind eyes not or scarcely impressed  
.....subg. *Neonebria* Hatch (*Nebria* Ganglb. nec Latr.)
- 2 (27) Pronotum with a seta-bearing puncture at side just in front of middle; legs black.
- 3 (18) Abdominal sternites three to five with from two to five seta-bearing punctures on each side of the middle along the posterior margin.
- 4 (7) Elytra shining black; pronotum with side margins widely reflexed, curving out directly from the hind angles.
- 5 (6) Only the third elytral interval with from three to five dorsal punctures, the interval not catenate; elytral humeri prominent, strongly rounded, the base of the elytra wider than the pronotum at its widest; hind angles of pronotum rectangular; head between eyes without rufous spots; length 12-13 mm.; Yukon (4), Alberta, Saskatchewan (7), eastern Washington, Idaho, western Montana, Colorado, New Mexico (5)  
.....*hudsonica* LeC.
- 6 (5) Elytral intervals three, five, and seven catenate, with

- from four to six dorsal punctures; the elytral humeri less prominent, more broadly rounded, the base of the elytra narrower than the pronotum at its widest; hind angles of pronotum acute; head between eyes with a pair of rufous spots; length 15-16 mm.; Washington (Mt. Rainier, Olympic Mts. (15), Mt. Adams—Lane), Oregon (Mt. Hood); (*trifaria* Van Dyke *pars*<sup>1</sup>).....*vandykei* Bänninger
- 7 (4) Elytra more or less brilliantly metallic, the third and seventh and frequently the fifth interval catenate with from one to eight dorsal punctures; head between the eyes with a pair of rufous spots.
- 8 (17) Elytral humeri prominent, strongly rounded, the base of the elytra wider than the pronotum at its widest; side margins of pronotum widely reflexed.
- 9 (10) Fifth elytral interval usually without punctures; length 10-12 mm., usually under 12; color brilliant metallic; elytral intervals rounded to flat; hind angles of pronotum acute to rectangular or subobtuse; southeastern Alaska (15) and Alberta through western Montana and northern Idaho to northern Oregon [Mt. Hood (15), Wallowa Mts.].....*gebleri* Dej.<sup>2</sup>
- 10 (9) Fifth elytral interval always with dorsal punctures; length 10-14 mm., usually over 12 mm.; elytral intervals more or less convex.
- 11 (12) Hind angles of pronotum strongly acute, the side margins in front of the hind angles evidently parallel; elytra less brilliantly metallic; length 10-13 mm., usually over 12 mm.; Washington (Glacier Peak, Mt. Rainier, Olympic Mts.).....*meanyi* Van D.
- 12 (11) Hind angles of pronotum rectangular or obtuse, the side margins curving out almost directly from the hind angles; elytra more brilliantly metallic.
- 13 (14) Elytra reddish purple, the striæ usually finely, obscurely punctate; hind angles of pronotum subrectangular; length 11-14.5 mm.; Aleutian Is. (13) along the coast to northern Washington (Mt. Rainier, Olympic Mts.); eastern British Columbia (2); western Montana (13).....*metallica* Fisch.
- 14 (13) Elytra violaceous.
- 15 (16) Elytral striæ finely, obscurely punctate; hind angles of pronotum rectangular; dorsal punctures more strongly im-

<sup>1</sup> *Vandykei* is said to be distinguished from typical *trifaria* LeC. (Colorado, Utah) by its more shining dorsal surface due to a finer microsculpture, relatively broader head; the pronotum with more prominent anterior angles, more feebly arcuate sides, the side margins in front of the hind angles very feebly sinuate, the side margins more strongly reflexed, the hind angles more prominent and more acute; the elytra broader, more evidently inflated behind, the intervals more convex; the ædeagus nearly evenly arcuately narrowed along its outer margin, the end broadly rounded.

<sup>2</sup> Specimens of *gebleri* in my collection from the eastern portions of its range, especially a series from the Wallowa Mountains, Oregon, seem to have the elytral intervals flatter, the hind angles of the pronotum less acute, and the side margins of the pronotum in front of the hind angles less parallel than do coast specimens, and may represent a feebly differentiated subspecies.

- pressed, from six to eight in a series; length 14 mm.; Alberta (Banff).....*schwarzi* Van D.
- 16 (15) Elytral striæ relatively coarsely punctate; hind angles of pronotum obtuse; dorsal punctures less strongly impressed, from five to seven in a series; length 13-14 mm.; replaces *metallica* at high elevations in the western portions of British Columbia (Merritt) (3) and Washington (Darrington, Glacier Peak, Mt. Baker, Mt. Rainier, Olympic Mts., Skagit River, Mt. Adams—Lane).....*piperi* Van D.
- 17 (8) Elytral humeri less prominent, more broadly rounded, the base of the elytra narrower than the pronotum at its widest; elytral intervals three, seven, and sometimes five catenate, with dorsal punctures; side margins of pronotum narrow, very narrowly reflexed, the hind angles subobtuse; elytra purple; length 11.5-12.5 mm.; western Montana (11), Idaho (15), Colorado .....*purpurata* LeC.
- 18 (3) Abdominal sternites three to five with only a single seta-bearing puncture on each side of the middle along the posterior margin; head between eyes without a pair of rufous spots; sides of pronotum widely reflexed.
- 19 (26) Dorsal punctures strongly impressed.
- 20 (23) Pronotum from three-fifths to two-thirds as long as broad, its sides in front of the hind angles usually appreciably subparallel; color more or less brownish; dorsal punctures confined to third interval.
- 21 (22) Length 9-10 mm.; usually smaller and less robust; Labrador (14), Alberta, Montana, British Columbia, eastern Washington .....*labradorica* Csy.
- 22 (21) Length 9-11 mm.; usually larger and more robust; Washington [Cascade Mts. (14), Glacier Peak (14), Mt. Bonaparte, Mt. Rainier, Olympic Mts. (14)].....*crassicornis* Van D.
- 23 (20) Pronotum less than three-fifths as long as broad, its sides in front of the hind angles very briefly constricted, curving out almost at once from the hind angles.
- 24 (25) Color black or brownish; elytra with fifth interval usually with impressed dorsal punctures, the intervals variably convex, the striæ variably punctate; the hind angles of the pronotum subrectangular to obtuse, the side margins in front of the hind angles strongly sinuate to nearly oblique; legs black to rufous; length 8.5-10 mm.; Kamchatka (13) and eastern Siberia (13) through central and south central Alaska (13) to Mackenzie (13) .....*bifaria* Mann.
- 25 (24) Color above metallic bronze or green to (*parvula* Sahlb., *reducta* Csy.) very black; fifth elytral interval without dorsal punctures; hind angles of pronotum nearly rectangular; length 7.5 mm.; Pribilof Is.(?) (13), southwestern (13) and central (4) Alaska, Yukon (4).....*viridis* Horn<sup>3</sup>

<sup>3</sup> Schaupp (Bull. Brook. Ent. Soc. 1878) includes "Wash. Terr." among the localities cited, but there is no recent confirmation of the occurrence of this species in this region.

- 26 (19) Dorsal punctures not or very feebly impressed; color black, the elytra obscurely viridescent; pronotum with hind angles obtuse, the side margins in front of the hind angles oblique, scarcely sinuate; length 9-12 mm.; British Columbia (8) and northern Idaho to northern California (8); (*brevis* Csy.) ..... *virescens* Horn
- 27 (2) Pronotum without a seta-bearing puncture at sides; abdominal sternites three to five with two to four seta-bearing punctures on each side of the middle along the posterior margin; dorsal punctures confined to the third elytral interval; head between eyes usually with a pair of rufous spots (sometimes absent in *sahlbergi*).
- 28 (39) Hind angles of pronotum subrectangular.
- 29 (34) Pronotum with side margins for a considerable distance in front of the hind angles subparallel or even incurved, side margins broadly reflexed.
- 30 (31) Pronotum with hind angles rectangular or slightly acute, the side margins in front of the hind angles subparallel or very feebly incurved; elytra black, frequently with a violaceous or viridescent tinge; legs usually black but specimens with pale legs are cited; length 8.5-9.5 mm.; south central Alaska (13) to Oregon, Colorado (13), Lake Superior (12), Labrador (12), Newfoundland (12), and New Hampshire (12) ..*sahlbergi* Fisch.<sup>4</sup>
- 31 (30) Pronotum with hind angles acute, the sides of the pronotum in front of the hind angles somewhat recurved.
- 32 (33) Larger (length 10-11.5 mm.); the elytra frequently metallic green or blue; legs variable in color; seacoast of southern Alaska from Unalaska to Sitka (13).....*gregaria* Fisch.<sup>5</sup>
- 33 (32) Smaller (length male: 9 mm., female: 11 mm.); elytra nigropiceous, the antennæ and legs paler; distinguished, according to Van Dyke, from *gregaria* by being less elongate, the pronotum with the sides more suddenly constricted posteriorly and the basal impressions better defined, the elytra with better defined humeri, sides more parallel and general shape less spatulate, and from *sahlbergi* by its shorter elytra and less evidently punctured striæ; southern Alaska (Unalaska, Katmai, Kodiak) (13).....*aleuta* Van D.<sup>5</sup>
- 34 (29) Pronotum with side margins curving out almost immediately from the hind angles, the side margins relatively narrow and feebly reflexed.
- 35 (38) Dorsal surface black.
- 36 (37) Legs black; length 10.5-13 mm.; southeastern Alaska (15) west of the Cascades to Oregon (15)..*mannerheimi* Fisch.<sup>6</sup>

<sup>4</sup> Compare remarks on this species by Van Dyke (12) and Fall (4). The eastern phase is *moesta* LeC., but Miss Mank (11) believed that she detected both *moesta* and *sahlbergi* in her material from Glacier National Park.

<sup>5</sup> Both *gregaria* and *aleuta* are closely similar to *sahlbergi*, of which they may be local races.

<sup>6</sup> *Mannerheimi* is recorded from Colorado by Wickham (16) but the record requires confirmation.

- 37 (36) Legs pale; length 10-12 mm.; Alaska (9) through eastern and western Washington and Oregon to southern California (15); (*tenuipes*, *transversa*, *hippisleiyi*, and *formalis* of Casey) ..... *eschscholtzi* Men.
- 38 (35) Dorsal surface and legs pale; length 9.5-11 mm.; sea beaches from British Columbia (15) to Crescent City, California (15)..... *diversa* LeC.
- 39 (28) Hind angles of pronotum obtuse, the side margin in front of the angles oblique, not or scarcely sinuate, side margins widely reflexed; black, the legs and antennæ pale; length 11-12 mm.; eastern Washington and Alberta through western Montana (6) to Wyoming (9), Colorado (16), and Utah (10) ..... *obtusa* LeC.
- 40 (1) Elytral humeri oblique.....subg. *Nebriola* Daniel  
Elytra bright metallic, the third and seventh intervals with dorsal punctures; pronotum with a seta-bearing puncture at sides just in front of middle, the hind angles rectangular or acute; head with a pair of rufous spots between eyes; legs black; male protarsi with three segments dilated.
- 41 (42) Head and pronotum obscurely metallic; sides of pronotum in front of the hind angles distinctly parallel for a considerable distance, abdominal sternites three to five usually with a single seta-bearing puncture on either side of middle along the posterior margin; length 12-13 mm.; southeastern Alaska (15), British Columbia (1), Washington [Glacier Peak (15), Mt. Rainier, Olympic Mts.], Oregon (Mt. Hood); (*columbiana* Csy.) ..... *kincaidi* Schwarz
- 42 (41) Head and pronotum not metallic; sides of pronotum curving out almost directly from the hind angles; abdominal sternites three to five usually with two seta-bearing punctures on either side of middle along the posterior margin; length 12-13.5 mm.; British Columbia [Selkirk Mts. (15), Lyman Glacier], Washington (Mt. Adams, Mt. Rainier, Olympic Mts.), Oregon (Mt. Hood); (*kincaidi* Bänn., *columbiana* Van Dyke, *vandykei* Darl.) ..... *paradisi* Darl.

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## COLLECTING AND DISTRIBUTIONAL NOTES ON SOME CALIFORNIA WEEVILS

(Coleoptera, Curculionidæ)

*Rhynchites velatus* Lec., which heretofore has been exceedingly rare in collections, was taken in great numbers on *Prunus andersonii* Gray, "Desert Peach," (host identified by Willis H. Wheeler) at Coleville, Mono County, California, on May 27, 1939, by M. A. Cazier, T. H. G. Aitken, Anthony Downes, and the writer. Additional specimens were collected by Stewart Lockwood and A. Showler on the same host at Peavine, Sierra County, California, on June 9, 1939. This striking species was described in 1880 by LeConte merely from Sierra Nevada, California. To the best of the writer's knowledge the species remained unknown except for the type specimen for over thirty years until R. S. Woglum collected a few larvæ and adults at Palm Springs, Riverside County, California, on May 15, 1914, in the fruit of *Prunus fremontii* Wats. (*Prunus eriogyna* Mason), "Desert Apricot." Later, on April 25 and April 4, 1915 and 1925, Dr. E. C. Van Dyke collected four more specimens at Palm Springs, California. Since one of the hosts, *Prunus andersonii* is known to occur as far north as Modoc County, California, *Rhynchites velatus* probably occurs along the western margin of the Great Basin for nearly a thousand miles.

*Crocidema californica* Van Dyke, type locality Idyllwild, Riverside County, California, was collected at Coleville, Mono County, California, by Mr. W. E. Simonds on July 9, 1933, and again at the same locality on May 27, 1939, by M. A. Cazier, T. H. G. Aitken, Anthony Downes, and the writer. This species, or a variety of the same, was also collected at Cedarville, Modoc County, California, on May 29, 1939, by the four latter collectors. The preferred host at the Coleville and Cedarville localities appeared to be *Purshia tridentata* DC.—P. C. Ting.